

Bank Margin Determination: A Comparison between Islamic and Conventional Banks of Pakistan

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ABSTRACT

This study examines the Islamic and conventional bank margin determinants. For comparative purpose five critical determinants of bank margin, including management, quality, market interest rate volatility, capital base, liquidity risk and bank size have been used for Islamic and conventional banks respectively. Moreover, bank margin and bank margin determinants integration of bank's financial performance is also investigated. This study is conducted in banking sector by taking into account 5 Islamic and five conventional banks. The database is divided in two groups (i) Islamic banks group; (ii) conventional banks group. GLS Random Effect and GLS Fixed Effect techniques of regression analysis are used in the study for comparative purpose. Therresults of this study show a significant relationship of management quality, market interest rate volatility, capital base, liquidity risk and bank size with Islamic and conventional bank margin. Moreover, bank margin and bank margin determinants integration positively affects conventional bank's financial performance and; negatively affects Islamic bank financial performance. Implications and future research directions have also been given in this study.

KEY WORDS: Bank Margin, Islamic Banking, Conventional Banking, Comparison, Bank's Financial Performance

INTRODUCTION

The rapid growing role of modern financial intermediaries hasgiven a radical chang to the whole situation of business and economy. The banking sector is considered as basic pillar for the development as well as strenghteningthe economy for the whole world (Vennet, 2008). Up to 20th century, the whole financial sector in the world was established on an interest basis, whichwas againstwith the injunctions of Islam and; a large number of the world population (Muslims) was not satisfiedwith the prevailing system, which gave urge for developing of interest free banking (Sufyan, 2009).

Islamic banking was intiatedin Pakistan in 1980s, the Council of Islamic Ideology gave the first ever report on Islamic economy and basic features of Islamic rules. The whole financial system was abruptly shifted to interest free banking system, but unfortunately it was failed in its applicationof truly Islamic banking due to inefficiency of Human Resources. In 1999, Higher Judiciary reconstituted the practices of Shria'h compliant; with the passage of time in the beginning of 21st century a new approach was introduced besides 80,s approach. The new approach was to establish Islamic banking window in the existing conventional banks.

In April 2007, there were 5 full-fledged Islamic banks with 108 branches and 13 conventional banks having 58 branches offering Islamic banking products in Pakistan (SBP, 2007). During last few years Commercial banks have shown marvelous progress and generated a considerable amount of foreign direct investment (FDI) in the Islamic banking industry. Banking industry experienced consistent expansion in its branch network and volume of total banking assets. The total number of branches has reached at 8233 with an increase of 343 branches within six months. By June 2011, five full-fledged Islamic banks and 12 conventional banks with independent Islamic Divisions were operating in Pakistan; covering a market share of 8%, with a branch network of 799 branches (SBP-2011).

There are two types banking systems in Pakistan; (i). Islamic banking IB and; (ii).conventional banking CB. Both systems are differentiated on the basis of objectives:Riba, Investment style, and risk sharing practices. IB follows principles of Sharia'h which are guided by Allah Almighty while, CB follows manmade SOPs; IB generates income as profits that is variable and according to the true principles of Islam while, in CB earns from the interest that is fixed; risk is shared among lender, borrower and bank in IB while CB transfers the whole risk to others; IB is trade oriented unit and work mostly on an equity basis while CB works as a pure financial intermediary to deal on the basis of interest.

In the past studies, there is a contradictionbetweenthe researchers' point of view in bank margin models and determinants. Researchers such as Ho and Saunders (1981); McShane and Sharpe (1985); Allen (1988); Angbazo (1997); Saunders and Schumacher (2000); Valverde and Fernandez (2005); VelveerdeandFernandze (2007); Memmel(2007)favor the dealership approach. However, some other researchers such as Lerner (1981); Zarruck (1989); Zarruk and Madura (1992); Wong (1997)is in favorofa micro static approachwhereasValverde and Fernandez (2007) introduced the traditional approach

to study bank margin. Little research has been done in the Islamic bank margin. Due to which, there is a lack of proper framework and therefore; existing literature is slightly unable to effectively manage the problem of Islamic and conventional bank margins. Moreover, the previous studies are limited to conventional bank margins and there is a little work of Islamic bank margin in the literature (Hutapea&Kasri, 2010). Based on the literature and in-depth analysis of the stated problem, the purpose of the study is to investigate the Islamic and conventional bank margins and their determinants. Moreover, the integration of bank margin behavior of Islamic and conventional banks in Pakistan.

During past few decades greater attention has been given to conventional bank margin. However, few researchers have emphasized on Islamic bank margin for instance Hutapea and Kasri, 2010 argues bank margin is an important source of earning for Islamic banks. Scarce literature on Islamic bank margin does not provide adequate comprehension, therefore, to help practitioners in getting a comprehensive understanding of the concept and formulating policies for better financial stability of banking sector more research is needed in the context of Pakistan.

Based on the nature of the problem identified above, this study has subsequent objectives:

- a) To examine relationship between management quality and bank margin for Islamic and; conventional banks of Pakistan.
- b) To investigate the relationship between market interest rate volatility and bank margin for Islamic and; conventional banks of Pakistan.
- c) To find out the relationship between capital base volatility and bank margin for Islamic and; conventional banks of Pakistan.
- d) To investigate the relationship between liquidity risk and bank margin for Islamic and; conventional banks of Pakistan.
- e) To find out the relationship between bank size and bank margin for Islamic and; conventional banks of Pakistan.
- f) To critically examine the impact of bank margin determinants and bank margin integration on banks, financial performance for Islamic and conventional banks of Pakistan.

The literature review suggests that bank margin and determinants of bank margin integration are overlooked in the literature. This study hypothesizes that a relationship exist between Islamic bank margin and; its determinants. Moreover, bank margin and bank margin determinants integrations on bank financial performance. The Islamic bank margin study is almost overlooked in the literature. In the current study the Islamic bank margin has been discussed and it is observed that Islamic bank margin has a relationship with banks financial performance in term of profitability and this study will facilitate it too.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Bank Margin

In the literature, there is consensus regarding the concept of bank margin because researchers have explained it in the same way. Bank margin is defined as the difference between interest revenue on bank assets and interest expense on bank liabilities, which is presented as a proportion of average bank assets or earning assets (Tarus, Chekol&Matwol, 2012; Hutapea&Kasri,2012). Literature regarding models and determinants of Bank margin has been summarized in following table:

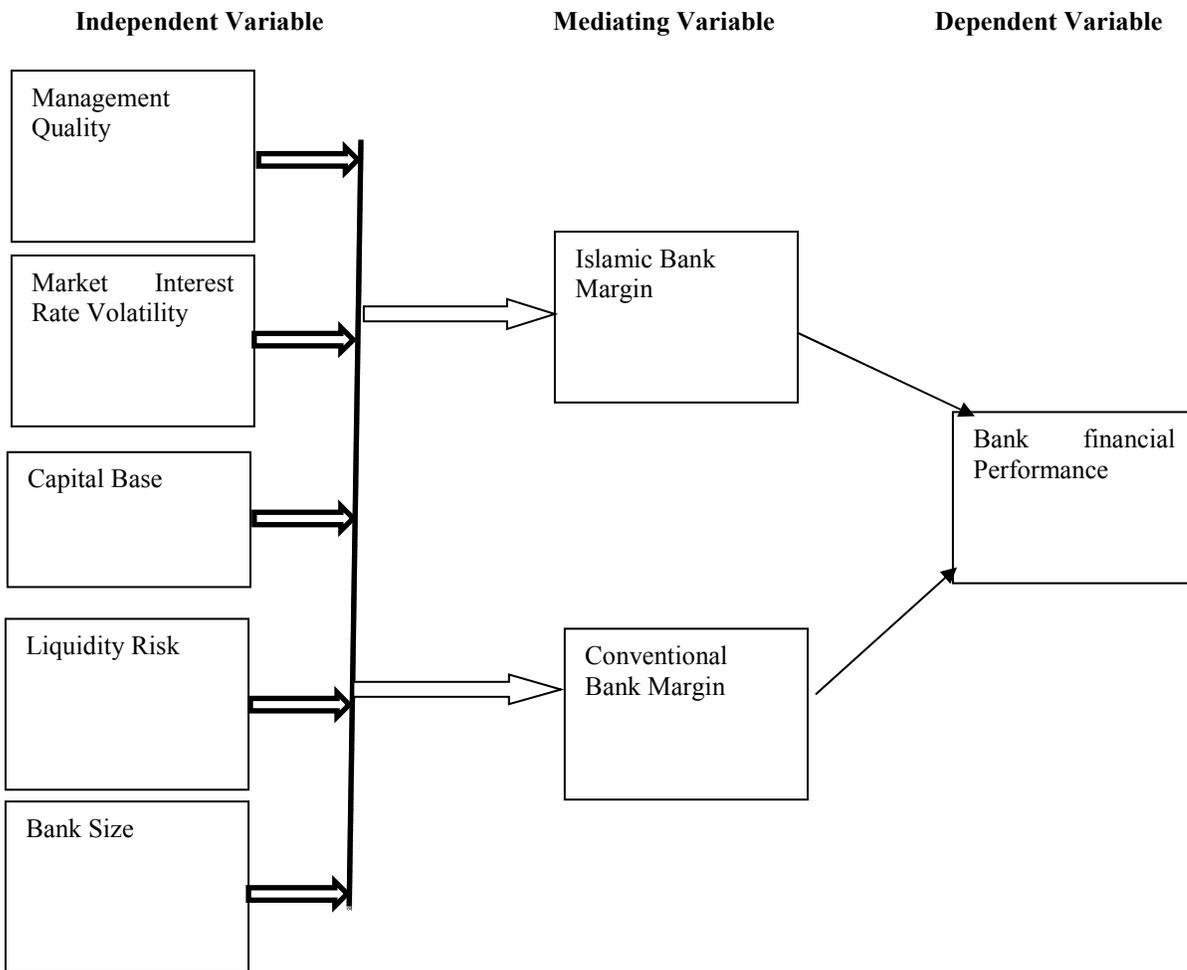
Table 2.1
Summary of different approaches discussed above.

Concept/Model/ Determinants	Author	Findings	Deficiencies
Dealership model	(Ho & Saunders, 1981; McShane&Sharpe, 1985; Allen, 1988; Angbazo, 1997; Fernandez, 2005, 2007)	Bank act as a dealer between loans and deposits.	Heterogeneity across the banks & the administrative cost of loan& deposits, etc. are not taken into account
Static Micro model	(Lerner, 1981; Zarruck, 1989; Zarruk& Madura, 1992; Wong, 1997; Vanet, 2002).	Clear both demand for loans and supply of deposit markets simultaneously	Not successful in developing countries.
Traditional model	(Ververde&Fernandze, 2005)	Gross income and loan to deposit rate spread is used to measure bank margin	Nontraditional activities are not taken into account.
Determinants of bank margin	(Ho &Saunders, 1981; Kasman, Vardar, &Okan, 2010; Memmel& Schwartz, 2011; Ahokpossi, 2013.	Transaction uncertainty, credit risk, liquidity risk,	Ownership, corporate taxation, the financial structure in term of bank size etc. is not discussed.
Islamic bank margin	(Harpoon &Shanmugam, 1995; Haron& Ahmed 2000; Mangkuto, 2004; Kasri, 2008; Hutapea&Kasri, 2010).	Interest rate volatility is negatively related to bank margin.	Contradiction in literature very little literature on Islamic banking.

Bank Financial Performance

Financial performance of a business is the result of resources that a business has under its control (Nizdak& Maryam, 2012; Jawadi et al., 2013;Johnes et al., 2013). However; in past studies, there is consensus on the definition of financial performance and;the financial performance of banks is defined in the same way for developed and developing countries. Researches mainly used two types of approaches to measure the bank performance such as (i) intermediation approach (Epure, 2011; Awartani&Maghyereh, 2013; Arjomandi, 2012; Nizdak& Maryam, 2012 Arora&Arora, 2013); (ii) profit maximization approach (Kenjegalieva& Simper, 2011; Arjomandi et al, 2014). Intermediation approach is applied to investigate the efficiency of banks regarding transformation of deposits from depositors into loans of different maturities for borrowers (Arora&Arora, 2013; Nizdak& Maryam, 2012). However, in intermediation approach only intermediation services (borrowing and lending) are checked. By merely focusing on the intermediation services and excluding the other approach of the banking system is likely to provide an incomplete picture of productivity changes. While the operating approach defines banks’ output as total revenue (interest and non-interest income) and considers interest and non-interest expenses as inputs. However; this approach does not take into account the lending and the borrowing performance of the bank and thus provide the overall efficiency of the bank.

Figure 2.1. Theoretical Framework



In literature, there are a lot of determinants of bank performance. Different researchers have given different determinants of banking performance. These determinants are categorized on the base of three forms which are (i) bank specific determinant (ii) country specific determinant and, (iii) macroeconomic factors. The determinants on the base of categories are explained below. The bank specific determinant of banking performance include bank efficiency (Drake et al., 2006; Berger, 2007; Sufian, 2008; Pasiouras, 2008); profitability (Barth et al,1997; Kunt& Huizinga, 1999; Quispe& Whistler, 2006; Athanasoglou et al, 2008); equity (Angbazo, 1997; Kunt&Huizinga, 1999; Saunders & Schumacher, 2000;

Drakos, 2003; Maudos& Guevara, 2004; Pasiouras&Kosmidou, 2007; and Naceur&Goaied, 2008) and credit risk (Chirwa, 2003, Maudos& Guevara, 2004; Flamini et al., 2009). However; some important determinants such as creditworthiness, share price, customer retention and bank business model are ignored. Moreover; relationship of these determinants vary some have positive relationship, some have negative relationship and some have mix relationship as well across country results of determinant also vary as well as relationship also depend on the type of bank like public bank, private bank, saving bank, investment bank, Islamic bank and conventional banks etc. The country specific determinant of banking performance include bank acquisition (Bhattacharya et al., 1997; Isik& Hassan, 2002; Atallah& Le, 2006); market structure, interest rate (Molyneux& Thornton, 1992; Berger, 1995) and deregulation (Keeley, 1990; Matutes&Vives, 2000; Bolt & Tieman, 2004; Allen & Gale, 2004). However; some important determinants such as creditworthiness, credit rating are ignored. In the literature, it is observed that macroeconomic conditions have a relationship with bank performance. Some researchers such as (Necuar&Orman, 2011; Pathan& Faff, 2013; Mirzaei et al., 2013; Lee et al., 2014) states that growth along with inflation is determinant of banking performance. However; the relationship of macroeconomic factors with banking performance varies and can be positive, negative or neutral depending on the macroeconomic condition of the economy under observed.

A new framework as depicted in Figure 2.1 is established to fulfil the gaps in the literature. The framework fills the gaps by checking the relationship of Islamic and conventional bank margins by using the determinants which are not discussed before in the literature. Moreover; after finding Islamic and conventional bank margin, the effect of Islamic and conventional bank's margin on banks, financial performance will also be checked which has not been checked before in the literature.

Figure 2.1a

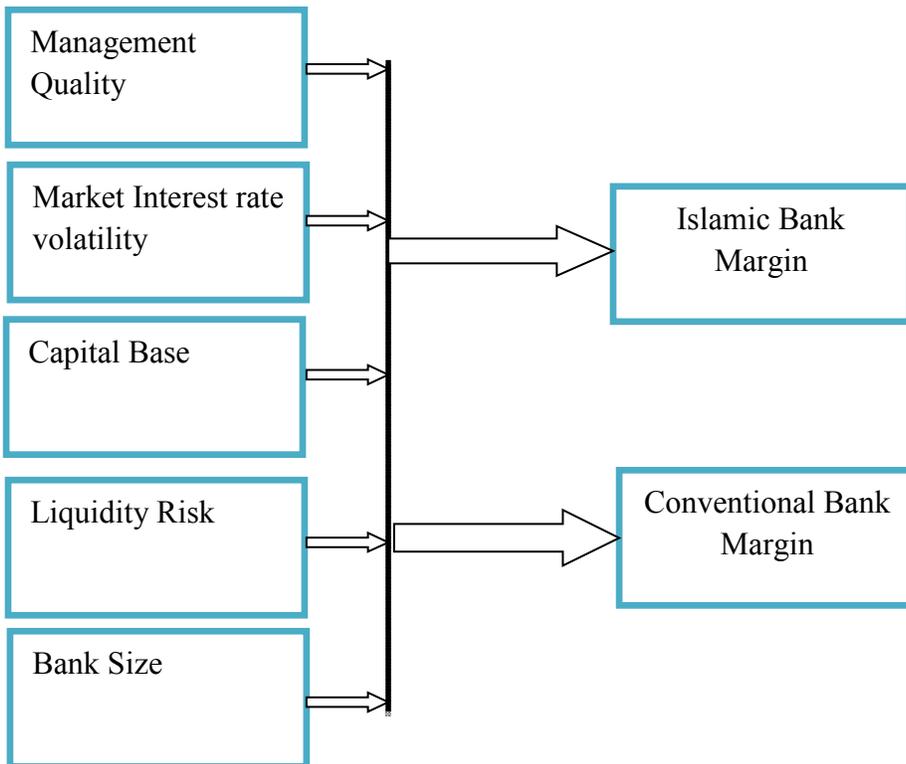
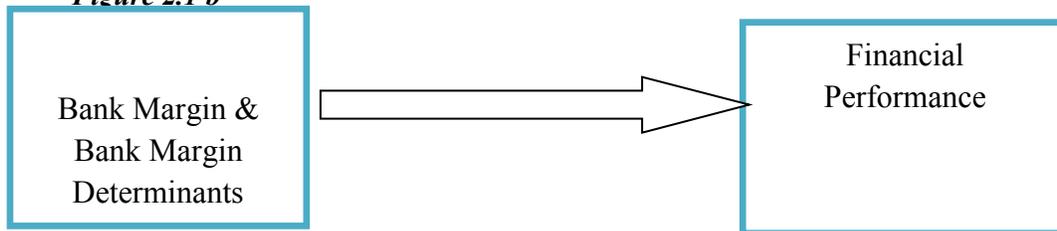


Figure 2.1 b



In the above Figure 2.1 framework independent variables include management quality, market interest rate volatility, capital base, liquidity risk and bank size; mediating variable is bank margin and the dependent variable is banking financial performance. The framework is subdivided into two parts given below.

Hypotheses

The hypotheses developed for this study is given below:

- H1 There is significant relationship between management quality and; Islamic bank margin as well as conventional bank margin.
- H2 There is significant relationship between Interest rate volatility and; Islamic as well as conventional bank margin.
- H3 There is significant relationship between capital base and; Islamic bank margin as well as conventional bank margin.
- H4 There is significant relationship between liquidity risk and; Islamic bank margin as well as conventional bank margin.
- H5 There is significant relationship between bank size and; Islamic bank margin as well as conventional bank margin.
- H6 There is significant relationship between conventional bank margin and bank financial performance.
- H7 There is significant relationship between Islamic bank margin and bank financial performance.

RESEARCH METHODOLOGY

Study Population and Selection Procedure

Population of the study includes financial institution which is banks listed at banking company ordinance 1962. The population of the study includes both conventional banks and Islamic banks as well. Financial institutions, banks are used because the study is related to bank margin and the reason for taking both conventional banks and Islamic banks is that because the aim of the study is to make a comparison between conventional banks and Islamic banks. Total population contains 24 banks; out of them 19 conventional banks and 5 Islamic banks. The sample size of the current study contains 10 banks; out of them 5 conventional banks which are scheduled banks and; 5 Islamic banks including all Islamic banks in Pakistan. The total sample contains 80 observations. For social science research it is recommended that 15 subjects per predictor are needed for a reliable equation (Stevens, 1996 p.72). The final sample of current study contains five conventional banks, including Habib Bank limited, United Bank, Muslim Commercial Bank, National Bank and Bank Alfah are taken into the study. Whereas Islamic banks, which are total five in Pakistan included in the study, i.e., Meezan Bank Limited, Burj Bank, Dubai Islamic Bank, Bank Islami and Al Baraqa bank. This study is being conducted on the secondary data related to the financial aspects of the financial institution which are banks listed in the banking company ordinance 1962. The required information of current study is taken from the financial statements of above selected banks. These financial statements are available at the banks' websites and also on the stock exchange websites. The financial statements can also be obtained from statement from SBP website. The information can be obtained of these financial reports from SBP website. The present study collected data of different variables like bank margin, financial performance, management quality, capital base, and liquidity risk and bank size have been taken from banks financial statements including income statements and balance sheets. However; market interest rate data have been taken from SBP website. Stata and Microsoft Excel have been used for analysis purpose.

Methods Employed

In the analyses, two types of analyses including descriptive analyses and empirical analyses have been performed for detailed investigation of the data collection. Descriptive analysis tells about the representation of data, moreover, it facilitates the identification of the data structure and behavior of data over time. The sample is divided in two equal groups, including conventional banks and Islamic banks groups respectively. Each group contains 40 observations. For a comparative purpose equal number of observations has been taken into sample size of each group. Descriptive statistics of important financial indicators and variables are presented. The analysis tells about the mean, standard deviation, minimum and maximum values of financial variables.

In empirical analyses, the hypothesized relationship for conceptual framework are either accepted or rejected by employing an appropriate technique. The employed tests and techniques in empirical analysis are discussed here. The regression analysis is used when there is a causal relationship between different variables (Gujrati, 2003; Greene, 2007). Generally regression parameter can be investigated by implementing different techniques including (i) Least Square, (ii) Maximum Likelihood Estimation (MLE), and; (iii) Generalized Method of Movements (GMM) (Gujrati, 2003). GMM and MLE techniques are used in the present study for measuring regression model. Whereas; for choosing most appropriate technique, Fixed Effect Housman test is applied after which both GLS with Random Effect and GLS with Fixed Effect have been applied in the present study for making comparison of results. One to one correlation is used to check two assumptions, i.e., No Multicollinearity and No Endogeneity. It states that independent variables must not be highly correlated to each other and their residual as well. Homoscedasticity assumption states that the residuals must have the same variables across all

groups and cross-sections. This assumption has been tested by applying Bartlett, Lvene, and Brown- Forsythe Tests. Fixed effect test is used to check if the firms are differing from each other in term of constant or not.

Model Specification and Variable Measurement

To measure conceptual framework it is needed to convert it into econometric model and present in equation form. As in the current study both techniques including GLS with Fixed Effect and GLS with fixed Effects have been used, respectively, therefore; equation for each technique is presented and applied separately.

Basic Research Model 1a

As the conceptual framework work has been divided into two sub parts so firstly the model 1a is presented for conventional and Islamic banks respectively. Bank Margin (bm) has been regressed on Management Quality (mq), Market Interest Rate Volatility (mir), Capital Base (kb), Liquidity Risk (lr) and Bank Size (size). These variables are measured as given below.

Bank margin. Bank Margin is the dependent variable of the model 1a. Information regarding bank margin is obtained from the bank’s annual reports. It is measured as ratio of net financing income to average earning assets. The information regarding net financing income is taken from the income statements of the bank and information regarding average earning assets is extracted from balance sheets. This is taken by following the previous researchers such as (Hutapea&Kasri,2012; Ahokpossi, 2013).

Management quality. Management quality is the independent variable of the model 1a. Information to measure management quality has been extracted from annual reports of banks. Management quality is estimated as the ratio of operating costs to operating income and; information has been extracted from the income statements of banks. Previous researchers, for example (Hutapea&Kasri, 2010; Memmel& Schwartz, 2011) used this ratio to calculate management quality in their studies.

Market interest rate volatility. Market interest rate volatility is the independent variable of the current study. Market interest rate volatility is the standard deviation of market interest rate. Information to measure market interest rate volatility is taken from the SBP website. Previous studies, such as (Ho &Saunder, 1981; Hutapea&Kasri, 2010) used this proxy to measure market interest rate volatility.

Capital base. The capital base is the independent variable of the current study. Information to calculate capital base is taken from annual reports of banks. Capital base describes the ratio of core equity to total assets. The information regarding core equity and total assets is extracted from the statement of financial position of the banks. In literature this proxy of capital base has been used by different researchers such as (Dietrich &Wanzenried, 2011; Naceur&Orman, 2011).

Liquidity risk. Liquidity risk is independent variable of the current study. Liquidity risk data are taken from annual reports of banks. Liquidity risk is described as the ratio of liquid asset to current liabilities. Information for measuring liquidity risk has been extracted from the balance sheet of banks. This proxy of measuring liquidity risk is used by many researchers such as (Angbazo, 1997; Brock & Suarez, 2000; Hutapea&Kasri, 2010; Ahokpossi, 2013).

Bank Size. Bank size is the independent variable of the current study. Bank size data are taken from the annual reports of the banks. Bank size is estimated by taking the log of total assets. Bank size’s information is extracted from the statement of financial position of banks. In literature this proxy for estimating bank size has been used by many researchers, for example (Cornett M, et al, 2005; Kutan et al., 2012; Nizdak& Maryam, 2012; Pathan& Faff, 2013).

Research Model 1b

The conceptual framework second part presents banks Financial Performance which is measured in term of profitability (per) is regressed on the MAR1 (fitted values of model 1a). These variables are estimated as below.

Financial Performance. Bank financial performance is the main dependent variable of the current study. Bank financial performance data has been taken from annual reports of banks. Bank financial performance is measured from gross profit ratio and net profit ratio. The data for estimating financial performance has been extracted from income statements of banks. This proxy has been used by many research in the past, including (Jawadi et al., 2013; Johnes et al., 2013).

Mar 1 (fitted values of model 1a). Mar1 is the independent variable of the model 1b. Information for this variable has been taken from model 1a results.

GLS random effect econometric equations. The following equations are depicting the research models 1a and 1b for GLS Random Effect for conventional banks and Islamic banks respectively. This model 1a presents that Bank margin BM is regressed on management quality (MQ), market interest rate volatility (MIR), capital base (KB), liquidity risk (LR) and bank size (SIZE). MQ, MIR, KB, LR and Size are used as explanatory variables, i and t represent specific bank at specific time. U denotes residuals and; β_0 is intercept while $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are slopes. The model 1b presents that bank, financial performance (PER) is regressed on the fitted values of model 1a which are CBMAR1 and IBMAR1. CBMAR1 and IBMAR1 are explanatory variables, i and t represent specific bank at specific time. U denotes residuals and; α_0 is intercept while α_1 is slope.

$$CBM_{it} = \beta_0 + \beta_1 MQ_{it} + \beta_2 MIR_{it} + \beta_3 KB_{it} + \beta_4 LR_{it} + \beta_5 SIZE_{it} + U_{it} \dots \dots \dots (1)$$

$$PER_{it} = \alpha_0 + \alpha_1 CBMAR1_{it} + U_{it} \dots \dots \dots (2)$$

$$IBM_{it} = \beta_0 + \beta_1 MQ_{it} + \beta_2 MIR_{it} + \beta_3 KB_{it} + \beta_4 LR_{it} + \beta_5 SIZE_{it} + U_{it} \dots \dots \dots (3)$$

$$PER_{it} = \alpha_0 + \alpha_1 IBMAR1_{it} + U_{it} \dots \dots \dots (4)$$

Fixed effects econometrics equation. The following equations are depicting the research models 1a and 1b for GLS Fixed Effect for conventional banks and Islamic banks respectively. The model 1a equation presents that Bank margin BM is regressed on management quality (MQ), market interest rate volatility (MIR), capital base (KB), liquidity risk (LR) and bank size (SIZE). MQ, MIR, KB, LR and Size are used as explanatory variables, i and t represent specific bank at specific time. U denotes residuals. MQ, MIR, KB, LR and Size are used as explanatory variables, i and t represent specific bank at specific time. € denotes residuals that are random and varying across banks and time and; β0 is intercept while β1, β2, β3, β4, β5 are slopes. The model 1b presents that bank, financial performance (PER) is regressed on the fitted values of model 1a, which are CBMAR1 and IBMAR1 for conventional banks and Islamic banks respectively. CBMAR1 and IBMAR1 are explanatory variables, i and t represent specific bank at specific time. € denotes residuals that are random and varying across banks and time and; α0 is intercept while α1 is slope.

$$CBM_{it} = \beta_0 + \beta_1 MQ_{it} + \beta_2 MIR_{it} + \beta_3 KB_{it} + \beta_4 LR_{it} + \beta_5 SIZE_{it} + \epsilon_{it} \dots \dots \dots (5)$$

$$PER_{it} = \alpha_0 + \alpha_1 CBMAR1_{it} + \epsilon_{it} \dots \dots \dots (6)$$

$$IBM_{it} = \beta_0 + \beta_1 MQ_{it} + \beta_2 MIR_{it} + \beta_3 KB_{it} + \beta_4 LR_{it} + \beta_5 SIZE_{it} + \epsilon_{it} \dots \dots \dots (7)$$

$$PER_{it} = \alpha_0 + \alpha_1 IBMAR1_{it} + \epsilon_{it} \dots \dots \dots (8)$$

Empirical Analysis

Regression Analysis

The regression analysis is applied to measure the conceptual framework. The results of the regression under GLS (Random & Fixed Effects) are presented. These techniques are applied using the current study, research model for conventional bank group and Islamic bank groups respectively. The classical regression model depicts BLUE estimators to prove that assumptions are satisfied (Gujrati, 2003; Greene, 2007).

Residual Normality

According to this assumption, the residual mean value should be zero. This assumption is fulfilled by applying Sharpiowilk test to check the normality of the data. Sharpiowilk test fulfills both skewness and kurtosis test characteristics in it. The sharpie wilk test is the most appropriate test for small sample size (Gujrati, 2003). In the Table 5.1 the null hypothesis is accepted, which represents that data is normally distributed.

Table 5.1: Normality Testing

Variable	Observations	Z	P value
Residuals (e)	80	0.278	0.610

No Multicollinearity and residual correlation with Regressors

This assumption means that independent variables should not be highly correlated with each other and with residuals as well. Table 5.2 below presents one to one correlation in independent variables and residuals. The table 5.3 depicts that no strong correlation exists among variables bank size, liquidity risk, capital base, management quality, market interest rate volatility, and bank margin and bank financial performance. So this assumption is satisfied.

Table 5.2: One to one correlation

	BS	LR	CB	MQ	MIR	BM	Residuals
BS	1						
LR	-0.01	1					
CB	-0.24	0.26	1				
MQ	-0.4	0.37	0.528	1			
MIR	-0.06	-0.32	-0.181	-0.1	1		
BM	0.14	-0.33	-0.052	-0.6	-0.3	1	
Residuals	0	-0	4E-16	-0	-0	0	1

Table 5.3: Correlation Testing

Variables	BS	LR	CB	MQ	MIR	BM	Mean value
Vif	1.80	1.44	1.42	1.35	1.19	1.18	1.39
1/vif	0.557	0.696	0.704	0.741	0.842	0.847	1.39

Homoscedastic Residual

Homoscedastic variance means that residuals must have the same variables across all groups and cross sections. This assumption has been investigated by applying the Bartlett test, Levene test, and Brown- Forsythe test. All of these three test, including Bartlett test, Levene test, and Brown- Forsythe test have null hypotheses of equal variance. Table 5.4 presents that according to, Levene test, and Brown- Forsythe test the null hypotheses are accepted at 1% level of significance; so this assumption is satisfied.

Table 5.4: Equality of Variance Test

Method	Df	Value	Probability
Bartlett	9	23.36176	0.0054
Levene	(9, 70)	1.697421	0.1059
Brown-Forsythe	(9, 70)	1.567181	0.1423

Hypotheses Testing

Conventional Bank Group

Table 5.5 describes the results of regression for conventional bank groups. The dependent variable is the bank margin (mar) regressed on market interest rate volatility (mir), management quality (mq), capital base (kb), liquidity risk (lr) and bank size (size). The Table 5.5 describes GLS with Random Effect and Fixed Effects simultaneously. This shows that R2 value is 0.758% with GLS Random Effects, and; 0.746% with GLS Fixed Effects shows variation in the dependent variable due to independent variables.

The coefficient of market interest rate volatility (mir) - 15.64% and -14.46% are highly significant at the 1 % level of significance in GLS Random and Fixed effects results respectively. The coefficient has negative significance; showing that market interest rate volatility (Meir) is inversely related to bank margin (bm). It depicts that if there is a 1 % increase in the market interest rate volatility (Meir), the bank margin (bm) will decrease 15.64% and 14.46% respectively. The market interest rate has a significant negative relationship with a Bank margin so H1 is accepted. The coefficient of management quality (mq) is -0.030% and -0.031% are highly significant at the 1 % level of significance in GLS Random and Fixedeffect results respectively. The coefficient has negative sign; showing that management quality (mq) is inversely related to bank margin (bm).It presents that if there is a 1 % increase in the management quality (mq), the bank margin (bm) will decrease - 0.030% and -0.030% respectively. Quality management has a significant negative relationship with a Bank margin so H2 is accepted. The coefficient of capital base is 0.200 and 0.166 is highly significant at the 1 % level of significance in GLS Random and 5% level of significance for GLS Fixed Effect respectively. The coefficient has positive sign; showing that capital base (kb) is directly related to bank margin (bm). It shows that if there is a 1 % increase in the capital base (KB), the bank margin (bm) will increase 0.200% and 0.166 respectively. Capital base has a significant positive relationship with bank margins so H3 has been approved. The coefficient of liquidity risk -0.066% and -0.034% is significant at the 10 % level of significance with GLS Random effects and insignificant with GLS fixed Effects. The negative sign shows an inverse relationship between bank margin and liquidity risk. It reveals that if there is a 1 % increase in the liquidity risk (Lr), the bank margin (bm) will decrease 0.066% and 0.0334% respectively. The negative sign shows an inverse relationship of bank margin with liquidity risk so H5 is approved with GLS random effects and disapproved with GLS Fixed effect.

Table 5.5: Conventional Bank Group (5 banks, 2006-2013) Regression Results: Regression of Bank Margin (mar) on Market Interest Rate (mir), Management Quality (mq), Capital Base (kb), Liquidity Risk (lr) and Bank Size (size) respectively.

Variables	Random Effect		Fixed Effects	
	Beta	T values	Beta	T values
Constant	12.02*** (2.151)	5.59	11.25*** (3.472)	3.24
Mir	-15.64*** (4.326)	3.61	-14.46*** (4.713)	3.07
Mq	-0.0302*** (0.00936)	3.23	-0.0312*** (0.00966)	3.22
Kb	0.200*** (0.0532)	3.76	0.166** (0.0608)	2.73
Lr	-0.0662** (0.0311)	2.13	-0.0337 (0.0468)	0.72
Size	-0.141 (0.224)	0.63	-0.112 (0.423)	0.26
Observations	40		40	
R- Squared	0.7579		0.7455	
Rho	0		0.1452	

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Sample include 40 observations (5 banks * 8 years)

Table 5.6 given below presents the results of regression by using GLS with Random and GLS with Fixed Effects. The dependent variable bank financial performance, which is measured by financial ratios of profitability is regressed on mar1 (which are fitted values of model 1a). The Table 5.6 describes GLS with Random Effect and Fixed Effect simultaneously. This shows that R2 value is 0.092% with GLS Random Effects and; 0.092% with GLS Fixed Effects shows variation in the dependent variables due to independent variables.

Table 5.7 depicts coefficient of mar1 is 2.768% with GLS Random Effect and 3.511% for GLS with Fixed Effects are significant at 10% and 5% level of significance with GLS random effect and Fixed Effects. The positive sign shows that there is a direct relationship between mar1 and performance. It shows that if there will 1% increase in the mar1, the performance will increase 2.768% and 3,511% respectively. Performance have a significant positive relationship with bank margin while (mar1 is as mediator) so H6 is accepted.

Table 5.6: Conventional Bank Group (5 banks, 2006-2013) Regression Results: Regression of Performance (per) on Bank Margin as a mediator (mar1).

Variables	Random Effects		Fixed Effects	
	Beta	T values	Beta	T values
Constant	37.839*** (6.657)	5.68	34.409*** (8.057)	4.27
Mar1	2.767* (1.409)	1.96	3.510** (1.718)	2.04
Observation	40		40	
R- Squared	0.0921		0.0921	
Rho	0		0.935	

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1
 Sample include 40 observations (5 banks * 8 years)

Islamic Bank Group

Table 5.7 describes the results of regression for conventional bank groups. The dependent variable is the bank margin (mar) regressed on market interest rate volatility (mir), management quality (mq), capital base (kb), liquidity risk (lr) and bank size (size). The Table 5.7 describes GLS with Random Effect and Fixed Effects simultaneously. This shows that R2 value is 0.484% with GLS Random Effects, and; 0.379% with GLS Fixed Effects shows variation in the dependent variable due to independent variables.

The coefficient of market interest rate volatility (mir) – 23.30% and -20.79% are highly significant at the 1 % level of significance in GLS Random and Fixed effects results respectively. The coefficient has negative significance; showing that market interest rate volatility (Meir) is inversely related to bank margin (bm). It depicts that if there is a 1 % increase in the market interest rate volatility (Meir), the bank margin (bm) will decrease 23.30% and 20.79% respectively. The market interest rate has a significant negative relationship with a Bank margin so H1 is accepted. The coefficient of management quality (mq) is -0.014% and -0.011% are highly significant at the 1 % level of significance in GLS Random and Fixed effect results respectively. . The coefficient has negative sign; showing that management quality (mq) is inversely related to bank margin (bm).It presents that if there is a 1 % increase in the management quality (mq), the bank margin (bm) will decrease - 0.019% and -0.011% respectively. Quality management hasa significant negative relationship with a Bank margin so H2 is accepted. The coefficient of capital base is 0.028% and 0.018% is insignificant in GLS Random and GLS Fixed Effect respectively so H3 is disapproved. The coefficient of liquidity risk -0.051% and -0.027% is significant at the 10 % level of significance with GLS Random effects and insignificant with GLS fixed Effects. The negative sign shows an inverse relationship between bank margin and liquidity risk. It reveals that if there is a 1 % increase in the liquidity risk (lr), the bank margin (bm) will decrease 0.051%.

The negative sign shows an inverse relationship of bank margin with liquidity risk so H4 is approved with GLS random effects and disapproved with GLS Fixed effect. The coefficient of bank size -0.426% and 0.023% is highly significant with random effect and insignificant with GLS Fixed effect. The negative sign shows an inverse relationship between bank margin (BM) and bank size. It shows that if there is a 1 % increase in the bank size (size), the bank margin (bm) will decrease 0.426% with GLS Random Effect.

Table 5.8 given below presents the results of regression by using GLS with Random and GLS with Fixed Effects. The dependent variable bank financial performance, which is measured by financial ratios of profitability is regressed on mar1 (which are fitted values of model 1a). The Table 5.8 describes GLS with Random Effect and Fixed Effect simultaneously. This shows that R2 value is0.121% with GLS Random Effects and; 0.121% with GLS Fixed Effects shows variation in the dependent variable due to independent variables.

Table 5.7: *Islamic Bank Group (5 banks, 2006-2013) Regression Results: Regression of Bank Margin (mar) on Market Interest Rate (mir), Management Quality (mq), Capital Base (kb), Liquidity Risk (lr) and Bank Size (size) respectively*

Variables	Random Effects		Fixed Effects	
	Beta	T values	Beta	T values
Constant	17.41*** (2.936)	5.93	12.62*** (3.619)	3.49
Mir	-23.30*** (5.824)	4.00	-20.79*** (5.752)	3.61
Mq	-0.0138*** (0.00332)	4.14	-0.0106** (0.00396)	2.69
Kb	0.0279 (0.0227)	1.23	0.0181 (0.0234)	0.77
Lr	-0.0505** (0.0226)	2.23	-0.0269 (0.0233)	1.16
Size	-0.426** (0.178)	2.39	-0.0233 (0.269)	0.09
Observation	40		40	
R- Squared	0.4835		0.3792	
Rho	0		0.16	

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1
 Sample include 40 observations (5 banks * 8 years)

The coefficient of mar1 is 6.696% with GLS Random Effect and 6.677% for GLS with Fixed Effects is highly significant at 10% and 5% level of significance with GLS random effect and Fixed Effects. The negative sign shows that there is an inverse relationship between mar1 and performance. It shows that if there will 1% increase in the mar1, the performance will decrease 6.6959% and 6.6769% respectively. Performance have a significant negative relationship with bank margin while (mar1 is as mediator) so H6 is accepted.

Table 5.8: *Islamic Bank Group (5 banks, 2006-2013) Regression Results: Regression of Performance (per) on Bank Margin as a mediator(mar1). Standard errors in parentheses*

Variables	Random Effects		Fixed Effects	
	Beta	T values	Beta	T values
Constant	57.63154*** (13.087)	4.40	56.096587*** (11.717)	4.86
Mar1	-6.959334** (3.195)	2.18	-6.769151*** (3.303)	2.05
Observation	40		40	
R- Squared	0.1209		0.1209	
Rho	0.604		0.56	

*** p<0.01, ** p<0.05, * p<0.1 Sample include 40 observations (5 banks * 8 years)

DISCUSSIONS, RECOMMENDATIONS AND CONCLUSION

Discussions

The present research was conducted to check the relationship between management quality, market interest rate volatility, capital base, liquidity risk and bank size with Islamic and conventional bank margins and; their impact on bank financial performance. The discussion is given below:

The first hypothesis of the study was to investigate the relationship of management quality with conventional bank margin and Islamic bank margin. The results in Table 5.5 and 5.7 show a negative relationship between management quality and Islamic as well as conventional bank margin. Finding of this hypothesis is inconsistent with previous researchers, i.e., Hutapea and Kasri (2010); Dietrich and Wanzenried (2011). They are of the opinion that management quality is the most important determinant of bank margin and higher management quality supports banks to lower interest margins through lower loan rates or higher deposit rates. The second hypothesis of the study was to investigate the relationship of market interest rate volatility with conventional bank margin and Islamic bank margin. The results in Table 5.5 and 5.7 show a negative relationship between market interest rate volatility and Islamic as well as conventional bank margin. Finding of current hypothesis is consistent with past, researchers, i.e., Brock and Rojas (2000); Claeys and Vennet (2008); Schwaiger and Liebig (2009); Marinkovic and Radovic (2010); Hutapea and Kasri (2010); Männasoo (2012). They stated negative relationship between interest rate volatility and bank margins. The third hypothesis of the present study is to investigate the relationship of capital base with conventional bank margin and Islamic bank margin. The results in Table 5.5 and 5.7 show a positive relationship between capital base and Islamic as well as conventional bank margin. The results of this hypothesis are

consistent with previous researchers, i.e., Kasman et al. (2010); Saad and El-Moussawi (2010); Ahokpossi (2013). According to them banks aim to transfer the cost of higher capitalization to its clients through higher bank margin and a bank holds capital in excess of the regulatory minimum, two positive effects on the bank margin are notable. Fourth proposed hypothesis was to investigate the relationship of liquidity risk with conventional bank margin and Islamic bank margin. The results in Table 5.5 & 5.7 show negative relationship between liquidity risk and Islamic as well as conventional bank margin. The current hypothesis finding is consistent with previous researchers including i.e., Gabrielli (2010); Hutapea and Kasri (2010); Ahokpossi (2013). They stated that an increase in liquidity reduces the bank liquidity risk, which reduces the bank margin due to a lower liquidity premium charged on loans. The fifth hypothesis of the present study is to investigate the relationship of bank size with conventional bank margin and Islamic bank margin. The results in Table 5.5 and 5.7 show a negative relationship between bank size and Islamic as well as conventional bank margin. The result of this hypothesis is consistent with previous researchers, i.e., Ho and Saunder (1981), Sauder and Sashmandar, 2000; Fungáčová and Poghosyan (2007); Dumičić and Rizdak (2012); Kasman et al. (2010); Saad and El-Moussawi (2012); Hamadi and Awdeh (2012). They are of the opinion that the presence of economies of scale as larger banks tend to have lower margins and smaller banks tend to have higher bank margin. The sixth hypothesis of the current study is to investigate the relationship of bank size with conventional bank margin and Islamic bank margin. The results in Table 5.6 and 5.8 show a negative relationship between bank size and Islamic as well as conventional bank margin. The result of this hypothesis is partially consistent with previous researchers, i.e., Corrent (2005); Masrurki (2012). They found the conventional bank's financial performance is positively related to bank margin and on the other hand, Islamic banks, financial performance is negatively related to bank margins.

Conclusion

As this study was about to make a comparison of bank margin determinants between conventional as well as Islamic banks and to investigate impact of bank margins on their financial performance respectively. It can be concluded from the current study that bank margin is the most important source of income for both types of banks. The current study identified five critical variables of bank margin after reviewing of literature, including Management Quality, Market Interest Rate Volatility, Capital Base, Liquidity Risk and Bank Size. It is established through empirical analyses that Management Quality, Market Interest Rate Volatility, Capital Base, Liquidity Risk and Bank Size have a significant relationship with bank margin. The current study found that the relationship between Islamic and conventional Bank Margin is almost same with Management, Quality, Market Interest Rate Volatility, Capital Base, Liquidity Risk and Bank Size except bank size is insignificant with conventional bank margin. Moreover, the directional relationship of Management Quality, Market Interest Rate Volatility, Capital Base, Liquidity Risk and Bank Size with Islamic Bank Margin and Conventional Margin is almost same. The current study found that bank margin is negatively related with Islamic banks' financial performance and bank margin is positively related to conventional bank financial performance. This is because of market interest rate swings which create a big problem for Islamic banks and financial performance of Islamic banks suffers. Due to this reason there are little loyal customers with Islamic bank as compare to conventional bank, which move to conventional bank when there is a favorable market condition.

Theoretical Contributions

- The Islamic bank margin study is almost overlooked in the literature. In the current study the Islamic bank margin has been discussed and it is observed that Islamic bank margin has a relationship with the bank's financial performance it terms of profitability.
- The relationship between bank margins and bank financial performance is overlooked in literature. This study tried to fill this gap and investigated the relationship between banks' financial performance and bank margin including both conventional and Islamic banks. The current study states that there is a significant positive relationship between convention bank margin and conventional bank's financial performance in terms of profitability whereas; a significant negative relationship between Islamic bank margin and Islamic bank's financial performance it term of profitability.

Practical Contributions

- The current study investigated the banking sector, including ten financial institutions which are both conventional and Islamic Banks respectively and findings are suppose to represent the financial characteristics of banking sector of the economy.
- It is observed that there is a significant positive relationship between convention bank margin and conventional bank's financial performance in term of profitability whereas; a significant negative relationship between Islamic bank margin and Islamic bank's financial performance it term of profitability.

Limitation of the Study

Studies in developed countries have used very large sample both in cross section and time series, but the current study used small sample sizes because Islamic banking data access from 2006. This study is merely conducted in Pakistan, it

could be applied to international level to check the results consistency. There are lots of determinants of bank margin, but limited, number of determinants have been used in the present research so this is limited. There are various types of performance, but only one type of performance is measured in the present research, so this is a limitation of present research.

Areas of Future Research

The contributions, implications and limitations of current research have suggested some areas for future research. First, future research can include other variable like operational risk, efficiency, economic development in the study. In the present research multiple regression technique is applied future research can use auto regressive lag distributed model with large sample size to check the results consistency. In current study panel data has been used future research can use a two-step approach to check results and future research can also be applied in the countries like Bangladesh, Singapore etc., to check the present research findings. Future research can take all types of performance in the current study model. Moreover, future research can also be done by making comparison of Islamic banks in Pakistan.

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